

THE OFFICE ACTION

In the office action issued on May 5, 2005, the Examiner rejected claims 1-9, 11, 14-23, 25, 28-39, 41 and 44-46 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6, 597,108 to Yano et al. ("Yano"). The Examiner further rejected claims 1-7, 9-12, 14-21, 23-26, 28-37, and 39-44 as being unpatentable over Yano in view of U.S. Patent Publication No. 2002/0122895 to Cheong et al. ("Cheong").

REMARKS

Applicant has carefully reviewed the office action. Applicant respectfully requests reconsideration of the application based on the above amendments and the following comments. Claims 1-46 remain pending in the application.

I. Cheong is not a Valid Prior Art Reference

The Examiner rejected claims 1-7, 9-12, 14-21, 23-26, 28-37, and 39-44 as being unpatentable over Yano in view of Cheong. The Examiner noted that "the applied reference has a common assignee with the instant application" and that "this rejection might be overcome by showing that the reference is disqualified under 35 U.S.C. §103(c) as prior art in a rejection under 35 U.S.C. §103(a). See MPEP §706.02(I)(1) and §706.02(I)(2)."

To establish common ownership at the time of the invention, Applicants hereby state "The present application and Cheong were, at the time the invention of the present application was made, were both owned by, or subject to an obligation of assignment to, IFIRE TECHNOLOGY INC." This declaration of common ownership removes Cheong as a valid prior art reference. Applicants therefore request withdrawal of the rejection based on Yano in view of Cheong.

II. The Present Claims are Patentable Over Yano

Claims 1-9, 11, 14-23, 25, 28-39, 41 and 44-46 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yano. The Applicants respectfully traverse.

Yano discloses a thick dielectric EL display having an upper thin film dielectric layer of SiON in contact with an alkaline earth thioaluminate, thiogallate or thioindate phosphor film. In contrast, the present invention recites a silicon oxynitride layer with a specific formula that has been demonstrated to improve the operating life of the display. The advantages of the present passivating layer are taught on pages 7 and 10 of the description where it is described that such a layer minimizes migration of oxygen into the phosphor, which as been determined to cause performance degradation.

In contrast to Yano, wherein the SiON layer is strictly used only as a dielectric layer in the EL displays therein, the present invention discloses the use of silicon oxynitride as a passivating layer, while also being suitable for use as a top thin film dielectric layer, as well as a thin film layer on the bottom side or on both sides of the phosphor film. This is not taught or suggested by Yano.

Yano fails to teach the specific ratios of elements in the claimed silicon oxynitride, nor the inclusion of hydrogen in the silicon oxynitride. The Examiner attempts to dismiss this difference as inconsequential by stating that "the silicon oxynitride of the Yano reference is close in structural similarity to the instant silicon oxynitride composition that it would be obvious to one of ordinary skill in the art that the silicon oxynitride composition of the Yano reference have similar properties of the instant silicon oxynitride composition." However, the Examiner provides absolutely no support for this assertion that the compounds would have similar properties.

The Examiner cites *In re Payne*, 203 USPQ 245 (CCPA 1979) in support of his assertion. However, the holding of *In re Payne* does not support such a broad conclusion and merely holds that when the prior art compounds essentially "bracket" the claimed invention and are all known to possess the claimed properties, then a prima facie case of obviousness is made.

As noted in *In re Grabiak*, 226 USPQ 870 (Fed. Cir. 1984), "[G]eneralization should be avoided insofar as specific chemical structures are alleged to be prima facie obvious one from the other". While there can be a prima facie case of obviousness even in an area as unpredictable as the biological properties of chemical compounds, such a case must be based on support in the prior art for

the structural change necessary to get from the prior art compound to the claimed compound.

Here, however, the prior art compound of Yano neither "brackets" the claimed compound nor has it been shown that it possesses the same properties.

Furthermore, as detailed above, the silicon oxynitride layer of the claimed invention primarily serves the function of a chemical barrier (passivating) layer but may also serve as a thin dielectric layer. There is no need for an additional upper thin film dielectric layer. Claim 1 recites the formula $\text{Si}_3\text{N}_x\text{O}_y\text{H}_z$ with x between 2 and 4, y between 0 and 2, and z between 0 and 1. This excludes Yano's nominal composition of SiON or even SiN if these are taken to be a true chemical formula. With this interpretation Yano's composition corresponds to $\text{Si}_3\text{N}_3\text{O}_3$, where $x = 3$, $y = 3$ and $z = 0$. This is outside of our claimed composition ranges for x , y and z .

Our specific silicon oxynitride formula provides the advantages as discussed on pages 7 and 10 of the description leading to minimal performance degradation of the phosphor during operation. In contrast to the situation of *In re Payne*, Yano neither teaches nor suggests the claimed formula or these advantages, which cannot simply be optimized and assumed that they would be provided by a silicon oxynitride with a different chemical formula. This is specifically discussed in the present application on page 2, last full paragraph, which states that silicon nitride (SiON) is not preferred for use as a barrier layer with thioaluminate phosphors. The chemical formula of the present silicon nitride provides for its characteristics and changes thereto may lead to very different properties. There is simply no motivation for the use of the present silicon nitride nor is there any teaching suggesting that the present phosphor is analogous to or otherwise obvious in light of the use of a SiON dielectric layer. For obviousness the cited document must suggest that which is claimed. Here, Yano fails to do so.

In making his rejection, the Examiner asserted that claims 14-15, 28-29 and 44-45 are product-by-process claims. The Applicant disagrees. These claims are not directed to a structure made by the process of "x" but rather claims 14 and 15 are directed to a phosphor structure (depends from claim 1) in which the silicon oxynitride layer is deposited by sputtering. It does not recite a structure made by the process of "x", only the silicon oxynitride layer is specified to be deposited by

sputtering. So these are not product by process claims. The same argument holds for claims 28-29 and 44-45.

However, even assuming for the purpose of argument that the noted claims are product by process claims, the Examiner has the burden of demonstrating that the products produced by the claimed process and the prior art are the same. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985). Here, the Examiner has provided no evidence of this.

CONCLUSION

In view of the above, Applicants submit the present application is in condition for allowance and respectfully request the rejections be withdrawn.

If any fee is due in conjunction with the filing of this response, Applicants authorize deduction of that fee from Deposit Account No. 06-0308.

Respectfully submitted,
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Date: _____

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